ACTA PHYSIOLOGICA SCANDINAVICA

EDITORIAL BOARD

Chief Editor

B. Uvnäs Stockholm

National Editors

N. A. Thorn Kobenhavn

R. M. Bergström Helsinki

J. Jansen Oslo

D. Ottoson Stockholm

Volume 125

Pages 1-756

Published for the
SCANDINAVIAN
PHYSIOLOGICAL SOCIETY by
BLACKWELL SCIENTIFIC PUBLICATIONS
1985

Published for the
Scandinavian Physiological Society by
Blackwell Scientific Publications
Osney Mead, Oxford OX2 oEL
8 John Street, London WCIN 2ES
23 Ainslie Place, Edinburgh EH3 6AJ
52 Beacon Street, Boston, Massachusetts 02108,
USA
667 Lytton Avenue, Palo Alto, California 94301,
USA
107 Barry Street, Carlton, Victoria 3053, Australia

© 1985 Scandinavian Physiological Society

Printed in Great Britain by the University Press, Cambridge Authorization to photocopy items for internal or personal use, or the internal or personal use of specific clients, is granted by the Scandinavian Physiological Society for libraries and other users registered with the Copyright Clearance Center (CCC) Transactional Reporting Service, provided that the base fee of \$02.00 per copy is paid directly to CCC, 27 Congress Street, Salem, MA 01970, USA. Special requests should be addressed to the Editor. 0001-6772/85 \$02.00.

Contents

VOLUME 125, NUMBER 1, SEPTEMBER 1985

FRIBERG, P., NORLANDER, M., LUNDIN, S. & FOLKOW, B. Effects of ageing on cardiac per-	
formance and coronary flow in spontaneously hypertensive and normotensive rats	1
HELLSTRÖM, P. M. Pharmacological analysis of the mechanism of action for colonic contraction induced by neurotensin, substance P and methionine—enkephalin	
	13
UVNÄS, B., ÅBORG, CH., LYSSARIDES, L. & THYBERG, J. Cation exchanger properties of	
isolated rat peritoneal mast cell granules	25
EDVINSSON, L. Characterization of the contractile effect of neuropeptide Y in feline cerebral arteries	33
AGNATI, L. F., FUXE, K., BENFANATI, F., ZOLI, M., OWMAN, C., DIEMER, N. H., KÅRSTRÖM,	33
J., Toffano, G. & Cimino, M. Effects of ganglioside GM1 treatment on striatal glucose	
metabolism, blood flow, and protein phosphorylation of the rat	42
ERIKSSON, Ö., MAYER-GOSTAN, N. & WISTRAND, P. J. The use of isolated fish opercular	43
epithelium as a model tissue for studying intrinsic activities of loop diuretics	
	55
FRIBERG, P., FOLKOW, B. & NORDLANDER, M. Structural adaptation of the rat left ventricle	,
in response to changes in pressure and volume loads	67
SUENSON, M. Interaction between ventricular cells during the early part of excitation in the ferret heart	81
HÄRFSTRAND, A., FUXE, K., KALIA, M. & AGNATI, L. F. Somatostatin induced apnoea:	
prevention by central and peripheral administration of the opiate receptor blocking agent	
naloxone	91
MEDBØ, J. I. & SEJERSTED, O. M. Acid-base and electrolyte balance after exhausting exercise	9-
in endurance-trained and sprint-trained subjects	97
NYLANDER, O., BERGQVIST, E. & ÖBRINK, K. J. Dual inhibitory action of somatostatin on	91
isolated gastric glands	111
FASTBOM, J. & FREDHOLM, B. B. Inhibition of [3H]glutamate release from rat hippocampal	111
slices by L-phenylisopropyladenosine	121
Sjövall, H. Afferent vagal control of fluid absorption in the feline jejunum	
	125
EKBLAD, E. B. M. Histamine: the sole mediator of pentagastrin-stimulated acid secretion	135
FRIED, G., LUNDBERG, J. M. & THEODORSSON-NORHEIM, E. Subcellular storage and axonal	
transport of neuropeptide Y (NPY) in relation to catecholamines in the co	145
MATTIASSON, I., NYSTRÖM, I., ABRAHAMSSON, PA. & HOOD, B. The relation between in vitro efflux of noradrenaline from platelets and vas deferens in man	155
Wigström, H. & Gustarsson, B. Facilitation of hippocampal long-lasting potentiation by	*33
GABA antagonists	159
GADA antagonists	159
Rapid communications	
AGNATI, L. F., FUXE, K., DAVALLI, P., ZINI, I., CORTI, A. & ZOLI, M. Striatal ornithine	
decarboxylase activity following neurotoxic and mechanical lesions of the mesostriatal	
dopamine system of the male rat	173
Instructions to Authors	177

VOLUME 125, NUMBER 2, OCTOBER 1985

STJÄRNE, L. & ALBERTS, P. Influence of temperature on stimulus-secretion coupling in the	
sympathetic nerves and on neuromuscular transmission, in guinea-pig vas deferens Posloncec, B., Uvnäs-Moberg, K., Hagerman, M., Castennson, S. & Uvnäs, B. Release of an insulin-like peptide from perfused extirpated cat legs in response to electrical stimulation of the sciatic and brachial nerves and to administration of ACh, bombesin, oxytocin and glibenclamide	181
STOCK, S. & UVNÄS-MOBERG, K. Oxytocin infusions increase plasma levels of insulin and VIP but not of gastrin in conscious dogs	205
AHRÉN, B. & LUNDQUIST, I. Effects of α-adrenoceptor blockade by phentolamine on basal and stimulated insulin secretion in the mouse	211
HELM, G., EKMAN, R., RYDHSTÖM, H., SJÖBERG, NO. & WALLES, B. Changes in oviductal VIP content induced by sex steriods and inhibitory effect of VIP on spontaneous oviductal	
contractility HEDLUND, H., FÄNDRIKS, L., DELBRO, D. & FASTH, S. On the transmission of sacral	219
parasympathetic nervous influence on distal colonic and rectal motility in the cat BLOMSTRAND, E., LARSSON, L. & EDSTRÖM, L. Contractile properties, fatiguability and glycolytic metabolism in fast-and slow-twitch rat skeletal muscles of various	225
temperatures Nilsson, H., Sjöblom, N. & Folkow, B. Interaction between prejunctional α_2 -receptors and	235
neuronal transmitter reuptake in small mesenteric arteries from the rat EDWALL, B., GAZELIUS, B., FAZEKAS, Á., THEODORSSON-NORHEIM, E. & LUNDBERG, J. M. Neuropeptide Y (NPY) and sympathetic control of blood flow in oral mucosa and dental	245
pulp in the cat	253
FALLENTIN, N., SIDENIUS, B. & JØRGENSEN, K. Blood pressure, heart rate and EMG in low level static contractions	265
CONRADI, N. G., SJÖSTRÖM, A., KARLSSON, B. & SOURANDER, P. Functional development of the visual system in normal and protein deprived rats II. Morphometric and biochemical studies on adult optic nerve	277
BENGTSSON, B. & KHAN, R. The influence of felodipine and diethyl-stilboestrol on [3H]noradrenaline release in the rat trachea	277
SUNDQVIST, T. & MAGNUSSON, KE. Modelling of intestinal permeability in man to	285
polyethylene glycols (PEG 400 and PEG 1000) Kvist, U., Björndahl, L., Roomans, G. M. & Lindholmer, C. Nuclear zinc in human	289
epididymal and ejaculated spermatozoa ENBERG, G., THAM, A. & SARA, V. R. The influence of purified somatomedins and insulin	297
on foetal rat brain DNA synthesis in vitro THORSTENSSON, A., ODDSSON, L. & CARLSON, H. Motor control of voluntary trunk movements	305
in standing Nilsson, H., Ely, D., Friberg, P., Karlström, G. & Folkow, B. Effects of high and low	309
sodium diets on the resistance vessels and their adrenergic vasoconstrictor fibre control in normotensive (WKY) and hypertensive (SHR) rats	323
Rapid communications SKOGLUND, C. R. & KNUTSSON, E. Vasometer changes in human skin elicited by high	
frequency low amplitude vibration Alstermark, B. & Wessberg, J. Timing of postural adjustment in relation to forelimb	335
target-reaching in cats	337

JAKOBSON, K. A., KIRK, K. L., DALY, J. W., JONZON, B., -O-LI, Y. & FREDHOLM, B. B. A novel 8-phenyl-substituted xanthine derivative is a selective antagonist at adenosine	
A ₁ -receptors in vivo MARTLING, CR., ÄNGGÅRD, A. & LUNDBERG, J. M. Non-cholinergic vasodilation in the	341
tracheobronchiol tree of the cat induced by vagal nerve stimulation ALBERTS, P. & ÖGREN, V. R. Sarin and soman depress [3H]acetylcholine secretion in guinea-pig	343
ileum myenteric plexus Вкоомé, M., Hökfelt, T. & Terenius, L. Peptide YY (PYY)-immunoreactive neurons in	347
the lower brain stem and spinal cord of the rat	349
VOLUME 125, NUMBER 3, NOVEMBER 1985	
SJÖSTRÖM, A., CONRADI, N. G., GUSTAFSSON, B. & WIGSTRÖM, H. Functional development of the visual system in normal and protein deprived rats. III: Recordings from adult optic	
nerve in vitro	353
SWERUP, C. & RYDQVIST, B. Effects of halothane on the transducer and potential activated	
currents of the crustacean stretch receptor	359
SAMUELSON, U. E., WIKLUND, N. P. & GUSTAFSSON, L. E. Dual effects of adenosine and adenosine analogues on motor activity of the human fallopian tube	260
BOBERG, U., MÜLLER-SUUR, C. & PERSSON, A. E. G. Renal interstitial pressure measured in	369
the subcapsular space using an in vivo oncometer	377
EKELUND, M., EL MUNSCHID, H. A., HÅKANSON, R. & REHFELD, J. F. Mechanism of hypergastrinaemia after nephrectomy in the rat	383
HÄGGBLAD, J., ERIKSSON, H. & HEILBRONN, E. ATP-induced cation influx in myotubes is additive to cholinergic agonist action	389
VØLLESTAD, N. K. & BLOM, P. C. S. Effect of varying exercise intensity on glycogen depletion in human muscle fibres	395
SARIA, A., MARTLING, CR., DALSGAARD, CJ. & LUNDBERG, J. M. Evidence for substance P-immunoreactive spinal afferents that mediate bronchoconstriction	407
GRUNDSTRÖM, N., KARLSSON, J. O. G. & ANDERSSON, R. G. G. The control of granule movement in fish melanophores	415
Helle, K. B., Pihl, K. E. & Serck-Hansson, G. Effects of calcium and limited proteolysis on membrane-bound and releasable dopamine β -hydroxylase in adrenomedullary cate-	
cholamine granules NILSSON, H. & SJÖBLOM, N. Distension-dependent changes in noradrenaline sensitivity in	423
small arteries from the rat	429
FUXE, K., SIEGEL, R. A., ANDERSSON, K., ENEROTH, P., MASCAGNI, F. & AGNATI, L. F. Acute continuous exposure to cigarette smoke produces discrete changes in cholecystokinin and substance P levels in the hypothalamus and preoptic area of the male rat	425
And Andersson, K. Mecamylamine pretreatment counteracts cigarette smoke induced changes in	437
hypothalamic catecholamine neuron systems and in anterior pituitary function	445
RIPPE, B., HARALDSSON, B. & FOLKOW, B. Evaluation of the 'stretched pore phenomenon'	773
in isolated rat hindquarters	453
HAMMARSTRÖM, M. Autonomic nervous control of endometrial secretion in the guinea pig	461
THORVALDSON, J., ILEBEKK, A. & KIIL, F. Determinants of pulmonary blood volume. Effects of acute changes in airway pressure	471
Mânsson, A. & Edman, K. A. P. Effects of amrinone on the contractile behaviour of frog	1,-
striated muscle fibres	481

HARDEBO, J. E. & KÅHRSTRÖM, J. Endothelial negative surface charge areas and blood-brai	n
barrier function	495
KJELLSTRÖM, B. T., ÖRTENWALL, P. & RISBERG, B. Effects of 5-hydroxytryptamine and related	
agents on endothelial cell oxidative metabolism in vitro	501
AAS, M., SKRETTING, A., ENGESET, A., WESTGAARD, R. & NICOLAYSEN, G. Lymphatic drainage	
from subcutaneous tissue in the foot and leg in the sitting human	505
GRUNDSTRÖM, N. & ANDERSSON, R. G. G. Inhibition of the cholinergic neurotransmission in	
human airways via prejunctional alpha-2-adrenoceptors HERRERA-MARSCHITZ, M., FORSTER, C. & UNGERSTEDT, U. Rotational behaviour elicited by	513
intracerebral injections of apomorphine and pergolide in 6-hydroxy-dopamine-lesioned rats. I: Comparison between systemic and intrastriatal injections	519
HERRERA-MARSCHITZ, M., FORSTER, C. & UNGERSTEDT, U. Rotational behaviour elicited by	319
intracerebral injections of apomorphine and pergolide in 6-hydroxy-dopamine-lesioned	
rats. II: The striaum of the rat is heterogeneously organized for rotational behaviour	529
CHASIOTIS, D. Effects of adrenaline infusion on cAMP and glycogen phosphorylase in fast-twitch	3-9
and slow-twitch rat muscles	537
EKBLOM, A., HANSSON, P. & FJELLNER, B. The influence of extrasegmental mechanical	
vibratory stimulation and transcutaneous electrical nerve stimulation on histamine-induced	
itch	541
LARSEN, T. S. & NILSSEN, K. J. On the hormonal regulation of lipolysis in isolated reindeer	
adipocytes	547
Rapid communications	
HØSTMARK, A. T. & BLOM, P. C. S. Previous exercise nullifies the plasma triacylglycerol	
response to repeated fructose ingestion in young men	553
HELLSTRAND, E. Brain metabolism and human gait - a PET study	555
Van Dongaen, P. A. M., Hökfelt, T., Grillner, S., Rehfeld, J. F. & Verhofstad, A. J. A cholecystokinin-like peptide is present in 5-hydroxytryptamine neurons in the spinal	
cord of the lamprey	557
total of and anniproj	331
VOLUME 125, NUMBER 4, DECEMBER 1985	
HARALDSSON, B. Effects of noradrenaline on the transcapillary passage of albumin, fluid and	
CrEDTA in the perfused rat hindlimb	561
HÄKKINEN, K., ALÉN, M. & KOMI, P. V. Changes in isometric force- and relaxation-time,	302
electromyographic and muscle fibre characteristics of human skeletal muscle during strength training and detraining	573
HÄKKINEN, K., KOMI, P. V. & ALÉN, M. Effect of explosive type strength training on isometric	313
force- and relaxation-time, electromyographic and muscle fibre characteristics of leg	587
WIIG, H., OPDAHL, H., NICOLAYSEN, A. & NICOLAYSEN, G. Interstitial fluid pressure in the	3-1
isolated perfused rabbit lung	601
HAUG, A., HØSTMARK, A. T. & SPYDEVOLD, Ø. Plasma lipoprotein distribution, faecal	
cholesterol excretion, and activities of lipoprotein lipase, hepatic lipase and lecithin:	
cholesterol acyltransferase in rats fed diets rich in sucrose or sunflower oil	609
VIKSE, A., BUGGE, J., DAHL, E. & KIIL, F. Dissociation between renal prostaglandin E2 and	
renin release. Effects of glucagon, dopamine and cyclic AMP in dogs	619
LINDVALL-AXELSSON, M., HEDNER, P., OWMAN, CH. & WINBLADH, B. Influence of thyroid	
hormones on transport function and Na ⁺ -K ⁺ -ATPase activity in the rat choroid plexus	627

Bradley, T., Hjemdahl, P., Dibona, G.-F., Osikowska, B. A., Sever, P. S. & Goldberg, L. I. Evidence against a functional role for dopamine-4-sulphate in the kidney

ÖGREN, S.-O., FUXE, K. & AGNATI, L. F. Evidence for a modulatory influence of centrally administered substance P on a 5-hydroxytryptamine-mediated behavioural response in the

male rat

AUTHOR AND SUBJECT INDEX

739

743

747